

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Preliminary map of the resource areas in the  
Basin and Range Province of California

by

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This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Any use of trade names is for descriptive purposes only and does not imply endorsement by the USGS.

1983

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Preliminary map of the resource areas in the  
Basin and Range Province of California

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The purpose of this map is to identify the mineralized areas within the Basin and Range Province. These areas include past and present mining and prospecting localities as well as areas of potential resources based on the projection of geologic data. This is a preliminary evaluation and is subject to review and the identification of future occurrences.

The limits of resource areas shown on the accompanying map are not legal mining district boundaries and may include more than one district as well as adjacent areas having some potential. Informal names are used for areas that have no formal name. A number of isolated deposits that have not been accorded district status are also shown.

The Basin and Range Province of California lies within the northeastern, southeastern, and east-central parts of the state (fig. 1). Mining districts within the province have been plotted on two map sheets at a scale of 1:500,000. Sheet one shows the south half of the State below latitude 37° North. Sheet two shows the north half of the State above latitude 37° North. The plot of the individual mines was made by using the Cartographic Automatic Mapping (CAM) Program (Central Intelligence Agency, 1977) on a Zeta 3600S plotter. A Lambert conformal conic projection based on standard parallels 33 degrees and 45 degrees was used as the base map.

Locations of individual mines (plotted as a plus for metallic minerals) were obtained from the U.S. Geological Survey's Mineral Resource Data System (MRDS) [formerly the Computerized Resource Information Bank (CRIB)], (Calkins and others, 1978). The plotted localities are not distinguished by size, deposit type, commodity, or production. The generalized boundaries without symbols represent areas known from the literature to be mineralized for which the MRDS files are presently incomplete.

Table 1 summarizes information for the district names, locations, commodities, deposit types, host rocks, and references. It is organized alphabetically by county and district name. Locations of the districts are designated by Township and Range. Metallic and nonmetallic commodities are included in the table; fossil fuel commodities are omitted because they are not included in the MRDS files. Commodities listed are not arranged in any significant size or order. The columns for deposit type and host rock contain information that pertains to the entire district. Numbers in the reference column refer to the references listed in Appendix A. These references are the sources of information used in the district compilation. Relatively isolated mines, which are not included within a mining district are not included in Table 1.

### References cited

- Calkins, J. A., Keefer, E. K., Ofsharick, R. A., Mason, G. T., Tracy, Patricia, and Atkins, Mary, 1978, Description of CRIB, the GIPSY retrieval mechanism, and the interface to the General Electric MARK III Service: U.S. Geological Survey Circular 755-A, 49 p.
- Central Intelligence Agency, 1977, CAM-Cartographic Automatic Mapping Program documentation (5th ed.): National Technical Information Service (NTIS) Report PB-270 304, 121 p.
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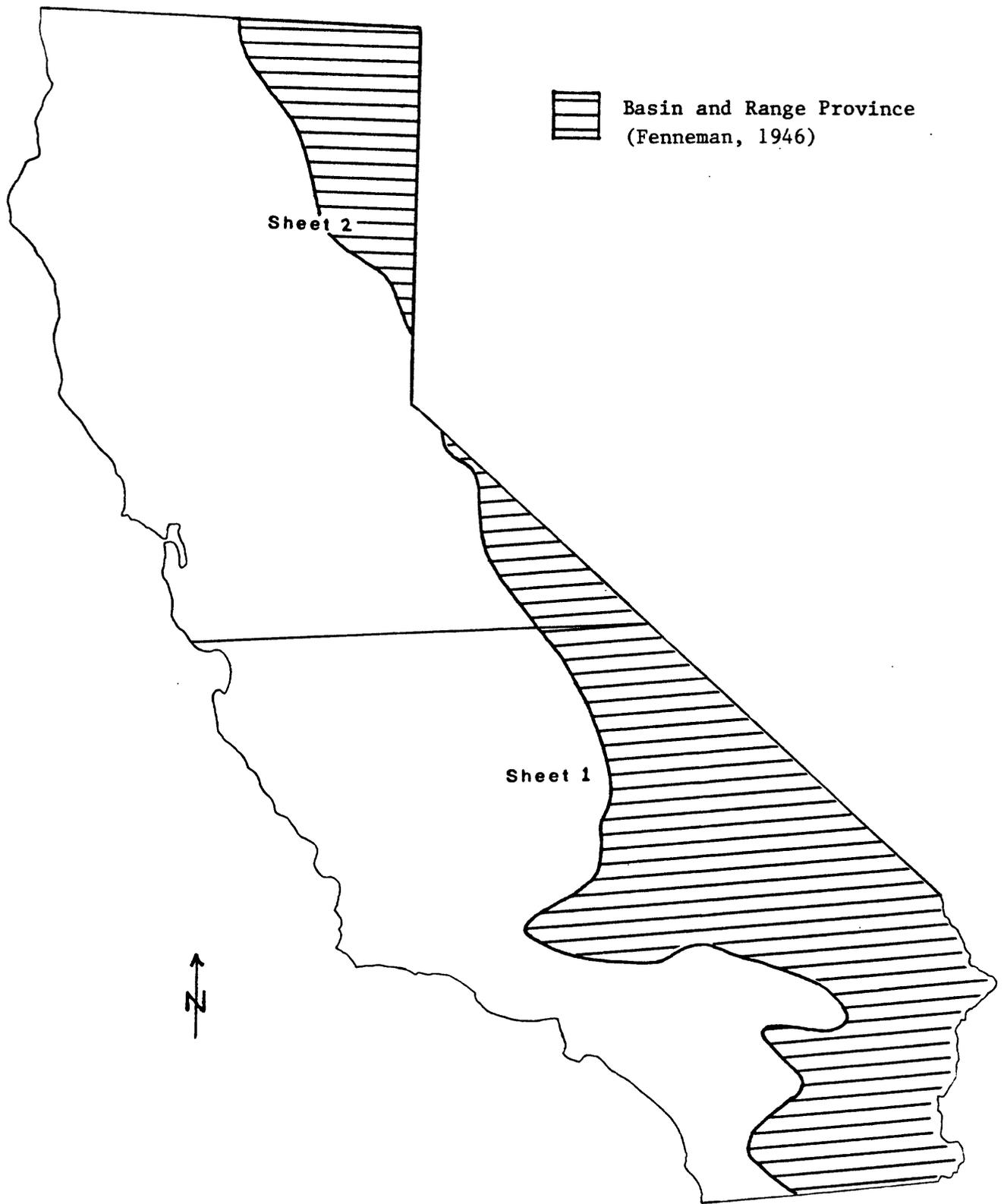


Figure 1. Index map of the Basin and Range province in California.

Table 1. District Descriptions

Mining district	Location			Commodities <sup>2</sup>	Deposit type ----	Host rock	References <sup>3</sup>
	Township	Range	Base <sup>1</sup>				
ALPINE COUNTY							
Mogul	10 N.	21 E.	MD	Au, Ag, Cu, Sb, Hg	Vein -----	Volcanic Rocks	9, 11
IMPERIAL COUNTY							
Cargo Muchacho	15 S.	21 E.	SB	Au, Ag, Cu, Pb, Zn, W	Vein -----	Arkosite, Quartz Diorite, Biorite Granite Quartz Monzonite, Gneiss	4, 9, 17, 26, 28, 35, 41, 42, 44
Chocolate Mountains Area	9 S.	15 E.	SB	Au, Ag, Pb, Cu, U, W	Vein -----	Schist, Alaskite Dike	9, 28, 35, 41
	10 S.	15 E.	do.		Shear Zone Contact ---	Hybrid Granitic, Quartz Monzonite	
	10 S.	17 E.	do.				
	11 S.	18 E.	do.				
	12 S.	18 E.	do.				
Coyote Mountains	15 S.	9 E.	SB	Au, Ni, Cu, W, Be	Contact Metamorphic --	Tactite, Limestone, Quartz Diorite	28
	16 S.	9 E.	do.		Pegmatite -----	Pegmatite Dike	
	16 S.	10 E.	do.		Contact -----	Pyroxenite, Quartz Diorite	
	17 S.	9 E.	do.				
	17 S.	10 E.	do.				
	18 S.	9 E.					
Fish Creek Mountains	13 S.	9 E.	SB	Au, Cu, W, Sr, Mn, Gypsum	Bedded -----	Gypsum Beds	10, 27, 28, 35
	14 S.	9 E.	do.		Fault Filling -----	Gneiss, Tertiary, Sediments	
	14 S.	10 E.	do.		Contact -----	Pegmatite, Quartzite, Biotite Schist	
Mesquite (Paymaster)	12 S.	19 E.	SB	Au, U	Hydrothermal Altered Zone -----	Quartzite, Schist, Basic Dike	9, 28, 35, 41
	13 S.	18 E.	do.		Placer -----	Gravel	
	13 S.	19 E.	do.		Vein -----	Schist	
Palo Verde	9 S.	19 E.	SB	Mn, Ba, Fe	Fissure Filling/Vein -	Pyroclastic, Conglomerate, Andesite Fanglomerate	6, 28, 35, 37, 41
	9 S.	20 E.	do.				
	9 S.	21 E.	do.				
Paymaster	11 S.	20 E.	do.	Au, Ag, Cu, Pb, Zn, Mn,	Placer -----	Fanglomerate	28, 35, 41
	11 S.	21 E.	do.	Fe, Ti	Contact -----	Schist, Granitic	
	12 S.	19 E.	do.		Vein -----	Gneiss, Granitic	
	12 S.	20 E.	do.		Fissure Filling -----	Conglomerate, Andesite	
	13 S.	20 E.	do.				
	13 S.	21 E.	do.				
Picacho (Southeastern Chocolate Mountains)	13 S.	22 E.	SB	Au, Ag, Pb, Cu	Placer -----	Gravel	9, 26, 28, 35, 41
	13 S.	23 E.	do.		Breccia Zone -----	Gneiss	
	14 S.	23 E.	do.		Vein/Shear Zone -----	Schist, Gneiss	
Potholes (Southeastern Chocolate Mountains)	15 S.	23 E.	SB	Au, Pb, Cu	Vein -----	Gneiss, Porphyroblastic Metagranite	9, 15, 28, 33, 35, 41
	15 S.	24 E.	do.		Placer -----	Gravel	
Tumco (Cargo Muchacho)	14 S.	20 E.	SB	Au, Cu, W	Vein -----	Gravel, Arkosite	4, 9, 17, 28, 35
	15 S.	20 E.					
INYO COUNTY							
Alabama	14 S.	36 E.	MD	Au, Fe, Cu	Vein -----	Felsite, Granite	29
	15 S.	35 E.	do.				
	15 S.	35 E.	do.				
Argus (Kelley)	23 S.	41 E.	MD	Au, Ag, Fe, Cu	Vein -----	Granite, Diorite, Andesite	9, 29
	23 S.	42 E.	do.				
Argus Range Area	23 S.	42 E.	MD	Au	Vein -----	Granite	29
	23 S.	43 E.	do.				
	24 S.	43 E.	do.				
Ballarat-South Park	21 S.	44 E.	MD	Au	Vein -----	Schist, Dolomitic Limestone, Gneiss	9, 29
	22 S.	44 E.	do.				
	22 S.	45 E.	do.				
Beveridge	13 S.	37 S.	MD	Au, Ag, C, Pb, Zn, Fe	Vein -----	Granite, Quartz Monzonite, Limestone Quartzite, Schist	29
	14 S.	37 E.	do.				
	14 S.	38 E.	do.				
Big Pine	8 S.	34 E.	MD	Au	Vein -----	Metasediments, Granitic Dikes	29
Bishop	8 S.	33 E.	MD	W, Cu, Sb	Contact Metasomatic --	Granite, Hornfels, Limestone, Marble	29
Bishop Creek (Buttermilk)	8 S.	31 E.	MD	Au, Ag, Cu, Zn	Vein -----	Quartzite, Granitic Rocks	9

Mining district	Location			Commodities <sup>2</sup>	Deposit type	Host rock	References <sup>3</sup>
	Township	Range	Base <sup>1</sup>				
INYO COUNTY (CONTINUED)							
Cerro Gordo	16 S.	38 E.	MD	Au, Ag, Cu, Pb, Zn	Vein	Limestone, Slate	14, 29
	16 S.	39 E.	do.		Replacement	Limestone	
	17 S.	39 E.	do.				
Chidsgo	7 S.	34 E.	MD	Au, Ag, Pb, Fe	Vein	Limestone	14, 29
Chloride Cliff (South Bullfrog)	30 N.	1 E.	SB	Au, Ag, Pb, Cu	Vein	Limestone, Schist, Quartzite	9, 14, 29
Darwin (Coso)	18 S.	40 E.	MD	Ag, Pb, Zn, Au, Cu, As,	Vein	Limestone, Tactite, Calc-hornfels	14, 16, 29
	19 S.	40 E.	do.	W, Sb, F, Fe	Replacement	Limestone	
	19 S.	41 E.	do.				
Deep Creek (Tungsten Hill)	7 S.	31 E.	MD	W	Contact Metasomatic	Quartz Diorite, Limestone	29
Deep Spring	6 S.	37 E.	MD	Ag, Cu	Vein	Granite	14, 45
Echo Canyon-Lees Camp	27 N.	3 E.	SB	Au	Vein	Metamorphic Rocks	9, 29
	28 N.	3 E.	do.				
	29 N.	3 E.	do.				
Fish Springs (Tinemaha)	10 S.	34 E.	MD	Au, Ag, Pb, Cu	Vein	Granite	9, 29
Grapevine	11 S.	43 E.	MD	Au	Vein	Metamorphosed Sedimentary Rocks	9
Greenwater	24 N.	3 E.	SB	Cu	Unknown		13, 45
	24 N.	5 E.	do.				
Harrisburg	17 S.	45 E.	MD	Au	Vein	Dolomitic Limestone	9, 29, 45
	18 S.	45 E.	do.				
Kearsage	13 S.	34 E.	MD	Au, Ag	Vein	Quartz Monzonite	9
Lee	16 S.	40 E.	MD	Au, Ag, Pb, Zn, Cu	Vein	Limestone	29
	17 S.	40 E.	do.				
Modoc	19 S.	42 E.	MD	Au, Ag, Pb	Vein	Granitic Rocks, Schist, Limestone	9, 14, 29
					Replacement	Limestone	
Old Coso	20 S.	40 E.	MD	Au, Ag, Cu, Hg	Vein	Granite	29
	21 S.	40 E.	do.				
Panamint	21 S.	45 E.	MD	Cu, Ag	Vein	Schist, Limestone	14
Pine Creek	7 S.	30 E.	MD	W, Cu, Mo, Au	Contact Metasomatic	Limestone, Hornfels, Quartz Diorite	29
Pine Mountain	6 S.	35 E.	MD	Au, Ag, Pb, Cu	Vein	Schist	29
					Replacement	Limestone, Schist	
Resting Spring	22 N.	7 E.	SB	Pb, Zn	Replacement(?)	Dolomite	14
Russ	14 S.	36 E.	MD	Au, Ag, Pb, Cu	Vein	Limestone	29
Saratoga	20 N.	8 E.	SB	Au, Ag, Pb, Zn, Cu	Replacement	Limestone	14
Skiddoo-Tucki Mountain	16 S.	44 E.	MD	Au	Vein	Quartz Monzonite	9, 29
	16 S.	45 E.	do.				
	17 S.	44 E.	do.				
	17 S.	45 E.	do.				
Slate Range (Arondo)	24 S.	44 E.	MD	Au	Vein	Granite, Schist	9
Swansea	16 S.	37 E.	MD	Ag, Pb, Zn, Cu	Fissure Filling	Limestone	29
Tibetts (Union)	12 S.	36 E.	MD	Au, Ag, Pb, Cu, W, Mo, Fe	Contact Metamorphic	Quartz Monzonite, Limestone	14, 23
	13 S.	35 E.	do.		Vein	Granite, Limestone	
	13 S.	36 E.	do.				
Ubehebe	14 S.	41 E.	MD	Au, Ag, Pb, Cu, W	Vein	Granite, Limestone	9, 45
	15 S.	40 E.	do.		Contact Metasomatic	do.	
	15 S.	41 E.	do.				

Mining district	Location			Commodities <sup>2</sup>	Deposit type <sup>4</sup>	Host rock	References <sup>3</sup>
	Township	Range	Base <sup>1</sup>				
INYO COUNTY (CONTINUED)							
Wild Rose	18 S.	45 E.	MD	Au, Ag, Cu, Pb, Sb, Zn	Placer -----	Gravel	9, 29, 48
	19 S.	45 E.	do.		Vein -----	Schist, Gneiss, Granitic Rocks	
					Replacement -----	Limestone	
Willow	22 N.	3 E.	SB	Au, Cu	Vein -----	Gneiss, Schist	9, 29
KERN COUNTY							
El Paso Mountains (Goler, Garlock, Searles)	28 S.	39 E.	MD	Au, Cu, Pb, U, F, B, Mn, Mo, Ag, W, Zn	Placer -----	Gravel	38
	29 S.	37 E.	do.		Vein -----	Schist, Quartz Diorite, Quartzite	
	29 S.	38 E.	do.		Disseminated -----	Dikes	
	29 S.	39 E.	do.		Replacement -----	Limestone	
	29 S.	40 E.	do.				
	30 S.	37 E.	do.				
Gorman Tin	9 N.	17 W.	SB	Sn, Ag, Cu, Zn, W, Fe, Mo, Pb	Contact Metamorphic --	Tactite, Limestone, Granite	38
	9 N.	18 W.	do.		Gossan -----	Limestone	
Indien Wells Canyon	25 S.	37 E.	MD	W, Th, Au	Contact Metamorphic --	Tactite, Limestone, Quartz Monzonite	38
	26 S.	37 E.	do.		Vein -----	Schist, Quartz Monzonite	
	26 S.	38 E.	do.				
Jawbone Canyon	29 S.	36 E.	MD	Au, Ag, Pb, Sb, Hg, W, U	Vein -----	Granitics	38
	29 S.	37 E.	do.		Placer -----	Gravel	
	30 S.	36 E.	do.		Contact Metamorphic --	Tactite	
	31 S.	36 E.	do.		Veinlets -----	Rhyolite	
	31 S.	37 E.	do.				
Mojave (Rosamond)	9 N.	13 W.	SB	AU, Ag, U, Cu, Pb, Sb	Vein -----	Rhyolite Volcanic, Quartz Monzonite	38
	10 N.	12 W.	do.				
	10 N.	13 W.	do.				
	11 N.	12 W.	do.				
Rademacher	27 S.	40 E.	MD	Au, Ag, Cu, W	Vein -----	Granitic Rocks	38
	28 S.	40 E.	do.				
Rand (Randsburg, Stringer)	29 S.	40 E.	MD	Au, Ag, W, Mn	Vein -----	Schist, Quartz Monzonite	9, 38
	30 S.	40 E.	do.		Placer -----	Gravel	
Tehachapi	10 N.	15 W.	SB	Au, W, Sb, U	Vein -----	Granitic Rocks	9, 38
	10 N.	16 W.	do.		Contact Metamorphic --	Tactite, Limestone, Granite	
	11 N.	14 W.	do.		Disseminated -----	Tuffaceous Sandstone	
	11 N.	15 W.	do.				
	32 S.	35 E.	MD				
LASSEN COUNTY							
Beckwourth Pass Area	22 N.	17 E.	MD	Au, Cu	Unknown		3
Diamond Mountain	29 N.	11 E.	MD	Au, Fe, Be	Placer -----	Gravel	3, 9
	29 N.	12 E.	do.		Vein -----	Quartz Diorite	
Hayden Hill	36 N.	9 E.	MD	Au, Ag, Mn	Vein -----	Rhyolite Tuff	3, 40
	37 N.	9 E.	do.				
	37 N.	10 E.	do.				
Honey Lake	26 N.	15 E.	MD	Au, Ag, Cu	Vein -----	Diorite	3
Mountain Meadows	28 N.	10 E.	MD	Au, Ag, Cu	Placer -----	Gravel	9
LOS ANGELES COUNTY							
Menach	8 N.	16 W.	SB	Au, Ag, Cu	Vein -----	Metasediments, Quartz Monzonite	9, 13, 49

Mining district	Location			Commodities <sup>2</sup>	Deposit type	Host rock	References <sup>3</sup>
	Township	Range	Base <sup>1</sup>				
MODOC COUNTY							
Cedarville Area	42 N.	15 E.	MD	Hg	Shear Zone	Andesite, Agglomerates	20
Cowhead Lake Area	47 N.	16 E.	MD	Au, Ag	Unknown		1
Dorris Reservoir Area	43 N.	14 E.	MD	Au, Ag	Vein	Unknown	1
High Grade (Hoag)	47 N.	15 E.	MD	Au, Ag, Cu	Vein	Rhyolite, Andesite	1, 9, 19
	47 N.	16 E.	do.				
	48 N.	15 E.	do.				
	48 N.	16 E.	do.				
Upper Alkaline Lake Area	45 N.	16 E.	MD	Cu	Vein	Andesite	13, 40
West Valley Reservoir Area	39 N.	14 E.	MD	Hg	Disseminated	Volcanic Tuff	20
Willow Ranch Area	46 N.	14 E.	MD	Au, Ag	Vein	Andesite	3, 31
	47 N.	14 E.	do.				
Winters	41 N.	9 E.	MD	Au	Vein	Andesite	9, 40
MONO COUNTY							
Blind Spring Hill	2 S.	31 E.	MD	Au, Ag, Pb, Cu	Vein	Granite	14, 34
	2 S.	32 E.	do.				
Bodie	4 N.	27 E.	MD	Au, Ag	Vein	Andesite	7, 9, 12
Bridgeport Area	5 N.	24 E.	MD	Hg	Fracture Filling	Sandstone	20
	5 N.	25 E.	do.				
Bridgeport South Area	3 N.	25 E.	MD	Hg, Au, Mn	Vein	Granite, Diorite	20, 34
	3 N.	26 E.	do.		Fissure Filling	Andesite	
	4 N.	25 E.	do.				
Chidago (Clover Patch, Indian, Yellow Jacket)	3 S.	30 E.	MD	Au, Ag, Pb, Zn, Cu, W	Vein	Granite, Rhyolite, Quartzite, Limestone, Schist	9, 14, 32, 34
	3 S.	31 E.	do.				
	4 S.	31 E.	do.				
Homer (May Lundy, Lundy)	2 N.	25 E.	MD	Au, Ag, Pb, Cu	Vein	Granodiorite, Schist, Slate, Hornfels	9, 12, 34
Jordan (Mono Diggings, Dogtown Diggings)	2 N.	25 E.	MD	Au, Ag, Cu	Vein	Hornfels, Limestone, Schist, Slate, Granite	9, 34
					Placer	Gravel	
Keith (Castle Peak)	3 N.	25 E.	MD	Au	Vein	Granite, Quartzite, Hornfels, Schist	9, 12, 34
Mammoth (Lake)	4 S.	27 E.	MD	Au, Ag, Pb, An, Cu, As,	Vein	Lignite	9, 34
	4 S.	28 E.	do.	Ba			
Masonic	6 N.	26 E.	MD	Au, Ag, Cu	Vein	Granite, Quartzite, Schist	9, 12, 34
Mono Lake Area	2 N.	25 E.	MD	Au	Vein	Slate	12, 34
Patterson	7 N.	24 E.	MD	Au, Ag, Pb, Cu, Mo	Vein	Andesite, Rhyolite	9, 12, 34
	7 N.	25 E.	do.				
Tioga	1 N.	25 E.	MD	Cu, Pb, Zn, Mo, Au	Vein	Metamorphics	14, 21, 22, 34
					Contact Metasomatic	Tactite	
West Walker River Area	7 N.	23 E.	MD	W, Au, Ag, Pb, Mo, Cu,	Pegmatite	Quartz Monzonite	12, 14, 23, 34
	8 N.	22 E.	do.	Zn, Cd	Vein	Schist, volcanic rocks	
	9 N.	22 E.	do.		Contact Metasomatic	Tactite	
	10 N.	22 E.	do.		Disseminated	Massive Sulfides	
White Mountains Area	2 S.	34 E.	MD	Au, Ag, Pb, Cu, W	Placer	Gravel	14, 34
	5 S.	33 E.	do.		Vein	Granitic Rocks, Schist, Limestone, Slate, Hornfels	

Mining district	Location			Commodities <sup>2</sup>	Deposit type	Host rock	References <sup>3</sup>
	Township	Range	Base <sup>1</sup>				
PLUMAS COUNTY							
Genesee	25 N.	11 E.	MD	Au, Cu, Ag	Placer	Gravel	2, 25
	25 N.	12 E.	do.		Vein	Hornfels, Schist, Slate, Meta-andesite	
	26 N.	11 E.	do.		Replacement	Granodiorite, Limestone	
	26 N.	12 E.	do.				
Lights Canyon	27 N.	10 E.	MD	Au, Ag, Cu, Pb, Zn, Fe	Placer	Gravel	13, 14, 24, 25
	27 N.	11 E.	do.		Vein	Diorite, Quartz Monzonite	
Red Rock	24 N.	16 E.	MD	Cu, U, Mo	Replacement veins	Granitic Rocks	39
RIVERSIDE COUNTY							
Arice (Onward)	2 S.	19 E.	SB	Au	Vein	Granite, Schist	9, 36
	2 S.	20 E.	do.				
Big Maria Mountains Area	3 S.	21 E.	SB	Au, Ag, Pb, Zn, Cu, Mn,	Replacement	Diorite Dike, Limestone	36, 43
	3 S.	23 E.	do.	Fe, W	Gossan	Dolomitic Limestone	
	4 S.	22 E.	do.		Vein	Granite, Schist	
	4 S.	23 E.	do.				
Bendigo (Riverside Mountain)	1 S.	22 E.	SB	Au, Ag, Pb, Fe, Cu, Mn	Replacement	Limestone, Schist	9, 36, 43
	1 S.	23 E.	do.		Vein	Granite, Schist, Limestone	
	1 S.	24 E.	do.				
Chuckwalla (Pacific)	6 S.	15 E.	SB	Au, Ag, Pb, W, Cu	Vein	Granite, Gneiss	9, 36, 43
	6 S.	16 E.	do.		Contact	Diorite Dike, Schist	
	7 S.	14 E.	do.				
	7 S.	15 E.	do.				
	7 S.	16 E.	do.				
	7 S.	17 E.	do.				
Cottonwood Mountains Area	5 S.	10 E.	SB	Au, Rare Earths	Unknown		36, 43
	5 S.	11 E.	do.				
Coxcomb Mountains Area	2 S.	16 E.	SB	Au	Unknown		36, 43
Dale (Virginia Dale, Pinto Basin)	2 S.	11 E.	SB	Au, Ag, Pb, Zn, Cu, U	Vein	Granite, Quartz Diorite, Banded Gneiss, Andesite, Schist	36
	2 S.	12 E.	do.				
	2 S.	13 E.	do.				
Desert Hot Springs Area	2 S.	5 E.	SB	Cu	Unknown		13
Dos Palmas	6 S.	11 E.	SB	Au, Mn, F	Replacement (?)	Schist	9, 36, 43
	6 S.	12 E.	do.		Vein	Gneiss, Schist, Granite	
	6 S.	14 E.	do.				
	7 S.	12 E.	do.				
Eagle Mountain	3 S.	13 E.	SB	Au, Ag, Pb, Cu, Fe	Replacement	Limestone, Granite	9, 36, 43
	3 S.	14 E.	do.		Vein	Granite, Metamorphic Rocks	
	4 S.	13 E.	do.				
Gold Park	2 S.	8 E.	SB	Au, Rare Earth	Vein	Quartz Monzonite, Gneiss	36, 43
	2 S.	9 E.	do.				
	2 S.	10 E.	do.				
Hexie	3 S.	9 E.	SB	Au	Vein	Granite, Schist, Diabase, Andesite	36, 43
	3 S.	10 E.	do.				
Little Maria Mountains Area	3 S.	20 E.	SB	Cu, W, Mn, F	Vein/Shear Zone	Schist, Granite, Quartzite, Limestone	36, 43
	4 S.	21 E.	do.				
Lost Horse	2 S.	7 E.	SB	Au, Fe	Vein	Quartz Monzonite, Gneiss	36, 43
	2 S.	8 E.	do.				
	3 S.	8 E.	do.				
McCoy Mountains (Ironwood)	4 S.	20 E.	SB	Au, Cu, Mn, U, Ag	Vein	Schist, Granite	36, 43
	6 S.	20 E.	do.				
Monument Mountain Area	4 S.	10 E.	SB	Au	Vein (?)	Unknown	36, 43
	4 S.	11 E.	do.				
Mule Mountains (Hodges)	7 S.	21 E.	SB	Au, Cu, Ag, Pb	Vein	Granodiorite	9, 36, 43
	8 S.	20 E.	do.				
	8 S.	21 E.	do.				

Mining district	Location			Commodities <sup>2</sup>	Deposit type	Host rock	References <sup>3</sup>
	Township	Range	Base <sup>1</sup>				
RIVERSIDE COUNTY (CONTINUED)							
Palen Mountains Area	3 S.	18 E.	SB	Cu, Fe, Mn, F, Au	Vein -----	Monzonite	36, 43
	4 S.	19 E.	do.		Contact -----	Limestone, Granite	
	5 S.	18 E.	do.				
Pinon	3 S.	8 E.	SB	Au, Bi	Vein -----	Granite, Quartzite	8, 9, 36, 43
	4 S.	9 E.	do.				
SAN BERNARDINO COUNTY							
Afton Area	10 N.	5 S.	SB	Au, Pb, Cu, Fe, Ti, Mn,	Vein -----	Granitic Rocks, Gneiss, Migmatite	50
	11 N.	6 E.	do.	F			
	12 N.	6 E.	do.				
Alvord	11 N.	3 E.	SB	Au, Cu, Fe, Pb	Vein -----	Limestone, Granite, Schist	9, 50
	12 N.	3 E.	do.				
Arrowhead (Arrow)	8 N.	14 E.	SB	Au, Cu, Ag, Pb	Vein -----	Diorite Dike, Quartz Monzonite	9, 50
	9 N.	13 E.	do.				
	9 N.	14 E.	do.				
Atolia	30 S.	41 E.	MD	W, Hg, Au, Ag, Sb	Vein -----	Schist, Quartz Monzonite	23, 50
					Placer -----	Gravel	
Awawatz Mountain Area	15 N.	6 E.	SB	Au, Ag, Cu, Pb, Zn, Fe,	Contact Metasomatic --	Limestone	50
	15 N.	7 E.	do.	Sr			
	16 N.	6 E.	do.				
Baldwin Lake (Bear Valley)	2 N.	2 E.	SB	Au, W, Ag, Pb, Cu, Fe	Vein -----	Limestone, Quartzite, Diabase, Monzonite	9, 50
	2 N.	3 E.	do.				
Belleville	8 N.	1 E.	SB	Cu, Au	Vein -----	Quartz Monzonite, Granite	50
Black Hawk (Silver Reef)	3 N.	1 E.	SB	Au, Ag, Pb, Zn, Cu	Vein -----	Limestone, Granite	9, 50
	3 N.	2 E.	do.				
	3 N.	3 E.	do.				
Calico	10 N.	1 E.	SB	Au, Ag, Pb, Zn, Cu, Ba	Vein -----	Rhyolite	14
Calumet	3 N.	13 E.	SB	Au, Ag, Cu, Fe	Vein -----	Granite, Gneiss	50
	3 N.	14 E.	do.				
Chubbuck	3 N.	16 E.	SB	Au, Ag, Cu, Pb, Zn	Vein -----	Schist, Quartzite, Marble, Granitic Rocks	50
Clark (Clark Mountain)	16 N.	13 E.	SB	Au, Cu, W, Pb, Ag, Zn	Vein -----	Gneiss, Quartz Monzonite, Limestone	9, 50
	17 N.	13 E.	do.				
Coolgardie	11 N.	3 W.	SB	Au	Placer -----	Gravel	9
					Vein -----	Granitic Rocks	
Dale	1 S.	12 E.	SB	Au, Ag, Pb, Cu, Sb, Bi,	Vein -----	Diorite, Granodiorite, Andesite Porphyry	50
	1 S.	13 E.	do.	Fe, Mn			
El Mirage Lake Area	6 N.	6 W.	SB	Ag, Pb, Zn, Cu, W	Contact Metasomatic --	Limestone	23, 50
	6 N.	7 W.	do.		Vein -----	Granite, Limestone	
	7 N.	6 W.	do.		Replacement -----	Limestone	
	8 N.	6 W.	do.				
Emerson Lake (Dry Lake)	4 N.	5 E.	SB	Au, Ag, Pb, Cu	Vein -----	Gneiss, Granite	9, 50
	4 N.	6 E.	do.				
Fremont Peak	12 N.	5 W.	SB	Au, Ag, Cu	Vein -----	Gneiss, Limestone, Diabase, Granite	50
	32 S.	42 E.	MD				
Fry Mountain Area	5 N.	2 E.	SB	Au, Cu, As	Vein -----	Granite, Hornblende Diorite, Quartz Monzonite	50
	5 N.	3 E.	do.				
	6 N.	2 E.	do.				
	6 N.	3 E.	do.				
Galway Dry Lake Area	5 N.	4 E.	SB	Fe	Replacement -----	Marble	50
	6 N.	4 E.	do.		Vein -----	Granite	
Gold Reef	7 N.	15 E.	SB	Au, W, Ag, Cu, Fe	Vein -----	Andesite, Gneiss, Schist	9
	8 N.	15 E.	do.		Contact Metasomatic --	Limestone	
	8 N.	16 E.	do.				

Mining district	Location			Commodities <sup>2</sup>	Deposit type ----	Host rock	References <sup>3</sup>
	Township	Range	Base <sup>1</sup>				
SAN BERNARDINO COUNTY (CONTINUED)							
Goldstone	13 N.	1 E.	SB	Au, Cu, Ag	Vein -----	Limestone, Shales, Diorite Dike, Schist	9, 50
	14 N.	1 E.	do.				
Granite Mountain Area	8 N.	12 E.	SB	Fe	Replacement (?) ----	Metamorphic and Granitic Rocks	50
Grapevine	32 S.	47 E.	MD	Au, Cu, W	Vein -----	Diorite, Quartz Monzonite, Quartzite, Granodiorite	9, 50
	12 N.	1 E.	SB		Contact Metasomatic --	Limestone, Granite	
Hackberry Mountain (Signal)	11 N.	17 E.	SB	Au, Cu, V	Vein -----	Gneiss, Schist	9, 50
	11 N.	18 E.	do.				
	12 N.	17 E.	do.				
	12 N.	18 E.	do.				
Halloran Springs	15 N.	9 E.	SB	Au, Cu, Ag, Pb, Fe	Vein -----	Quartz Monzonite, Basalt, Granite	9, 50
	15 N.	10 E.	do.				
	15 N.	11 E.	do.				
Hart	14 N.	18 E.	SB	Au	Vein -----	Rhyolite	9, 50
Hikorum	6 N.	10 E.	SB	Au, Cu	Vein -----	Quartz Monzonite, Granite	9, 50
	7 N.	11 E.	do.				
Holcomb Valley	2 N.	1 E.	SB	Au, Ag, Pb, Zn, Cu, Fe, W	Placer -----	Gravel	50
	3 N.	1 E.	do.		Vein -----	Quartz Monzonite, Limestone	
	3 N.	1 W.	do.		Contact Metasomatic -	do.	
	3 N.	2 W.	do.				
Homer Mountain Area	11 N.	19 E.	SB	Pb, Ag, Cu	Vein -----	Unknown	50
Ibex	10 N.	20 E.	SB	Au, Mn, Cu	Vein -----	Gneiss, Schist	50
	10 N.	21 E.	do.				
	10 N.	22 E.	do.				
Iron Ridge Area	5 N.	4 E.	SB	Au, Ag, As, Fe	Vein -----	Quartzite, Gneiss	50
	6 N.	4 E.	do.		Replacement -----	Marble	
Ivanpah (Bullion, Koko Weef, Mescal)	14 N.	14 E.	SB	Au, Ag, Pb, Cu, Zn, Fe,	Vein -----	Limestone, Quartz Monzonite	23, 50
	15 N.	13 E.	do.	W, Sn	Contact Metasomatic --	do.	
	15 N.	14 E.	do.				
Kingston Range Area	19 N.	10 E.	SB	Au, Ag, Pb, Zn, Cu, Fe	Contact -----	Dolomite, Limestone, Amphibolite	50
Lava Bed Mountains Area	7 N.	4 E.	SB	Au, Ag, Pb, Cu	Vein -----	Quartz Porphyry	50
	7 N.	5 E.	do.				
	7 N.	6 E.	do.				
Lead Mountain Area	4 N.	10 E.	SB	Au, Ag, Pb, Mo, V, Cu	Vein -----	Rhyolite Porphyry	50
Marble Mountains Area	6 N.	13 E.	SB	Fe	Replacement -----	Marble	50
	6 N.	14 E.	do.				
Mopah Range Area	3 N.	21 E.	SB	Au, Cu	Vein -----	Granite	50
Morongo	1 S.	4 E.	SB	Au, W, Bi	Vein -----	Granite, Limestone, Schist	9, 18
					Contact Metamorphic --	Limestone	
Morrow	29 S.	45 E.	SB	Au, Cu	Vein -----	Granite, Limestone	50
Mountain Pass	16 N.	13 E.	SB	Rare Earths, Cu, Pb, F,	Vein -----	Gneiss, Shonkinite-syenite	30
	16 N.	14 E.	do.	Mo, Zn, Ag, Sb, Ba			
Old Dad (Solo)	12 N.	10 E.	SB	Au, Cu	Vein -----	Gneiss, Quartzite	50
	13 N.	10 E.	do.				
Old Woman (Damby)	4 N.	17 E.	SB	Au, Pb, Zn, As, Ag, W, Cu	Vein -----	Schist, Quartzite, Granitic Rocks	9, 50
	5 N.	17 E.	do.	Hg, Sb	Contact Metasomatic --	Limestone, Granite	
	6 N.	17 E.	do.				
	7 N.	17 E.	do.				
Ord (Ord Mountain)	6 N.	2 E.	SB	Au, Ag, Pb, Cu, As, Fe,	Vein -----	Quartz Monzonite, Hornblende Diorite,	9, 47, 50
	7 N.	1 E.	do.	Mo, W, F		Andesite, Dacite, Rhyolite, Granite	
	7 N.	2 E.	do.		Contact Metasomatic --	Metavolcanic, Granite	
	7 N.	1 W.	do.		Replacement -----	Limestone	

Mining district	Location			Commodities <sup>2</sup>	Deposit type ----	Host rock	References <sup>3</sup>
	Township	Range	Base <sup>1</sup>				
SAN BERNARDINO COUNTY (CONTINUED)							
Oro Grande (Silver Mountain)	6 N.	4 W.	SB	Au, Ag, Pb, Cu, Zn	Vein -----	Limestone, Quartz Monzonite, Andesitic-Tuff	9, 50
	7 N.	4 W.	do.				
Piute Mountain Area	7 N.	17 E.	SB	Fe, Au, Ag, Pb, Zn, Cu, Hg	Vein -----	Gneiss, Schist	5, 20
	7 N.	18 E.	do.				
	8 N.	18 E.	do.				
	9 N.	18 E.	do.				
Providence Mountain Area	10 N.	14 E.	SB	Au, Ag, Pb, Fe, Cu	Vein -----	Quartz Monzonite	50
	10 N.	15 E.	do.				
Rand	19 S.	41 E.	MD	Au, Ag, Cu	Vein -----	Schist, Quartz Monzonite	9, 50
Rodman Mountain Area	7 N.	3 E.	SB	Au, Ag, Cu	Vein -----	Diorite, Monzonite	50
Sacramento Mountain Area	7 N.	20 E.	SB	Au, Ag, Cu, Fe, Hg	Vein -----	Gneiss, Granite	50
	7 N.	21 E.	do.				
	7 N.	22 E.	do.				
	8 N.	22 E.	do.				
	9 N.	22 E.	do.				
Shadow Mountains	17 N.	11 E.	SB	Au, Ag, Pb, Cu	Vein -----	Granitic Gneiss	9, 50
Sheep Hole Mountains Area	2 N.	11 E.	SB	Au, Fe	Contact Metasomatic --	Quartz Diorite	50
	2 N.	12 E.	do.		Vein -----	Granite	
Ship Mountain Area	5 N.	15 E.	SB	Au, Cu, Ag, Fe	Vein -----	Limestone, Granite	50
Slate Range (Arondo)	25 S.	45 E.	MD	Au	Vein -----	Granite, Schist	9, 50
Soda Mountains Area	13 N.	7 E.	SB	Au, Ag, Cu	Vein -----	Granite	50
	14 N.	7 E.	do.				
	14 N.	8 E.	do.				
Spangler	27 S.	42 E.	MD	Au	Vein -----	Granitic Rock	9
Stedman	6 N.	8 E.	SB	Au, Ag, Cu, Pb, Mn	Vein -----	Rhyolite, Andesite Porphyry, Dacite	9
	7 N.	8 E.	do.				
Trojan (Providence)	11 N.	13 E.	SB	Au, Cu, Ag, Pb, Zn, W, Fe	Vein -----	Quartz Monzonite	9
	11 N.	14 E.	do.				
Turtle Mountains Area	2 N.	21 E.	SB	Au, Cu	Vein -----	Gneiss, Schist	50
Twenty Nine Palms	1 S.	9 E.	SB	Au, Th	Vein -----	Granite, Schist	9, 50
Vanderbilt (New York)	13 N.	14 E.	SB	Au, Ag, Pb, Cu, Zn	Vein -----	Gneiss, Pegmatite Dike, Granite, Dolomite	9, 50
	14 N.	15 E.	do.				
	14 N.	16 E.	do.				
Whipple (Cross Roads, Havasu Lake, Monument)	2 N.	23 E.	SB	Au, Cu, Mn, Ag	Vein -----	Limestone, Granite	50
	2 N.	25 E.	do.		Bedded -----	Fanglomerate	
	2 N.	26 E.	do.				
	3 N.	23 E.	do.				
	3 N.	24 E.	do.				
3 N.	26 E.	do.					
SAN DIEGO COUNTY							
Benson Lake Area	12 S.	8 E.	SB	B	Evaporite -----	Dry Lake bed	46
Boulder Creek (Mineral Hill)	14 S.	3 S.	SB	Au, Ag, Te	Vein/Shear Zone -----	Schist, Quartz Diorite	9, 46
Campo Area	18 S.	5 E.	SB	Au, Mo	Vein (?) -----	Quartz, Porphyry	46
Clark Lake Area	10 S.	7 E.	SB	B	Evaporite -----	Dry Lake bed	46
Cuyamaca (Hensley)	13 S.	4 E.	SB	Au, W, Te	Vein -----	Schist, Granodiorite, Gneiss	9, 46
	14 S.	4 E.	do.				
	14 S.	5 E.	do.				
Deer Park	14 S.	4 E.	SB	Au, W, Mn	Vein -----	Schist, Diorite, Gneiss	46
	14 S.	5 E.	do.		Contact Metamorphic --	Tactite, Quartzite, Schist	

Mining district	Location			Commodities <sup>2</sup>	Deposit type ---	Host rock	References <sup>3</sup>
	Township	Range	Base <sup>1</sup>				
SAN DIEGO COUNTY (CONTINUED)							
Granite Mountain Area	13 S.	5 E.	SB	Au, W, Mn	Vein -----	Schist	46
	13 S.	6 E.	do.		Contact Metamorphic --	Tactite, Quartzite, Schist	
Jacumba Area	17 S.	7 E.	SB	W, Mn, Be, U, Th	Contact Metamorphic --	Tactite, Quartz Diorite	46
	17 S.	8 E.	do.		Pegmatite -----	Pegmatite Dike	
	18 S.	7 E.	do.				
Julian (Benner)	12 S.	3 E.	SB	Au, Li, Ni, Ag, Co, Cu,	Lenses, Lenticular veins		9, 46
	12 S.	4 E.	do.		Elongate veins ----	Schist	
	13 S.	3 E.	do.		Pegmatite -----	Pegmatite Dike	
	13 S.	4 E.	do.		Gossan -----	Norite	
Laguna Mountains	15 S.	4 E.	SB	Au	Vein/Shear Zone ----	Schist, Gneiss, Quartz Diorite	9, 46
	15 S.	5 E.	do.				
Metal Mountain	16 S.	6 E.	SB	Au, W, Ag, Pb, Zn	Vein -----	Schist	46
					Contact Metamorphic --	Tactite, Schist	
Montezuma	10 S.	4 E.	SB	Au, W, Sn, Cu, Ag, Mo	Vein -----	Schist, Diorite, Quartzite, Gneiss	46
	10 S.	5 E.	do.		Contact Metamorphic --	Tactite, Schist, Diorite	
	11 S.	4 S.	do.				
	11 S.	5 S.	do.				
	12 S.	4 E.	do.				
Pine Valley	15 S.	4 E.	SB	Au	Vein -----	Tonalite	46
	16 S.	4 E.	do.				
	16 S.	5 E.	do.				
San Felipe Creek Area	12 S.	5 E.	SB	Au, W,	Contact Metamorphic --	Tactite, Schist, Granitica	46
	12 S.	6 E.	do.				
Sweeney Pass Area	15 S.	7 E.	SB	Mn	Fracture Filling ----	Quartzite	46
SISKIYOU COUNTY							
Pumice Occurrences	39 N.	1 E.	MD	Pumice	Cinder Cone		CRIB
	43 N.	2 E.	do.				
	43 N.	4 E.	do.				
	44 N.	4 E.	do.				

<sup>1</sup>Location

E.--East  
MD--Mount Diablo Meridian  
N.--North  
S.--South  
SB--San Bernardino Meridian  
W.--West

<sup>2</sup>Commodities

Ag Silver	Cd Cadmium	Ni Nickel	Ti Titanium
As Arsenic	Cu Copper	Pb Lead	U Uranium
Au Gold	F Fluorine	Sb Antimony	V Vanadium
B Boron	Fe Iron	Sn Tin	W Tungsten
Ba Barium	Hg Mercury	Sr Strontium	Zn Zinc
Be Beryllium	Mn Manganese	Te Tellurium	
Bi Bismuth	Mo Molybdenum	Th Thorium	

<sup>3</sup>Refer to Appendix A for corresponding numbers.

## APPENDIX A

### References for Table 1

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